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CLAIMS

2 1. A liquid toner for electrostatic imaging which
3 comprises:

4 an insulating non-polar carrier liquid;
5 at least one charge director; and
6 toner particles dispersed in the carrier liquid, the
7 particles comprising:

8 a core material comprising a pigmented polymer
9 which is unchargeable or weakly chargeable by the at least
10 one charge director, but which is otherwise suitable for use
11 as a toner material; and

12 a coating of at least one ionomer component in
13 an amount effective to impart enhanced chargability to the
14 ordinarily unchargeable or weakly chargesble particles.

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16 2. A liquid toner for electrostatic imaging which
17 comprises:

18 an insulating non-polar carrier liquid;
19 at least one charge director; and
20 toner particles dispersed in the carrier liquid, the
21 toner particles comprising:

22 a core material which is chargeable to a first
23 polarity by the at least one charge director; and

24 a coating of at least one ionomer component in
25 an amount effective, together the at least one charge
26 director, to impart a charge having a polarity different
27 from the first polarity to the coated particles.

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29 3. Liquid toner according to claim 1 or claim 2, wherein
30 the particles are synthetic resin particles.

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32 4. Liquid toner according to any of the preceding claims
33 wherein the ionomers are carboxylic acid based and
34 neutralized with metal salts forming ionic clusters.

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36 5. Liquid toner according to any of claims 1-3 wherein
37 the ionomers are metacrylic acid based and neutralized with
38 metal salts forming ionic clusters.

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2 6. Liquid toner according to any of claims 1-3 wherein
3 the ionomers are sulfonic acid based and neutralized with
4 metal salts forming ionic clusters.

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6 7. Liquid toner according to any of claims 1-3 wherein
7 the ionomers are phosphoric acid based and neutralized with
8 metal salts forming ionic clusters.

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10 8. Liquid toner according to any of claims 1-3 wherein
11 the ionomers are ethylene based and neutralized with metal
12 salts forming ionic clusters.

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14 9. A method for producing liquid toners for electrostatic
15 imaging, which method comprises dispersing pigmented polymer
16 particles in insulating non-polar carrier liquid, and mixing
17 at least one ionomer which is not soluble at room
18 temperature with the dispersion.

19 10. A method according to claim 9 wherein the ionomer is
20 first heated to a temperature at which the ionomer dissolves
21 in the carrier liquid and then cooled to a temperature
22 whereat the ionomer is not soluble in the carrier liquid,
23 thereby coating the particles with ionomer material.

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25 11. A method according to claim 10 wherein the mixture is
26 agitated at least during the step of cooling.

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28 12. A method according to any of claims 9-11 and
29 comprising the step of adding at least one charge director
30 to the mixture.

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32 13. A method according to claim 10 or claim 11 and
33 comprising the step of adding at least one charge director
34 to the mixture after the step of cooling.

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36 14. A method according to claim 12 or claim 13 wherein the
37 particles are formed of a material which in presence of
38 charge director alone are ordinarily unchargeable or weakly

1 chargeable, but are otherwise suitable for use as toner
2 particles, and the at least one ionomer component is used in
3 an amount effective to impart enhanced chargeability to the
4 toner particles.

5

6 15. A method according to claim 12 or claim 13, wherein the
7 at least one ionomer component is used in an amount
8 effective to reverse the polarity conventionally imparted to
9 the material of the particles by the at least one charge
10 director.

11

12 16. A method according to any of claims 9-15, wherein the
13 particles are comprised of a synthetic resin.

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15 17. A method according to any of claims 9-15 wherein the
16 ionomers are carboxylic acid based and neutralized with
17 metal salts forming ionic clusters.

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19 18. A method according to any of claims 9-15 wherein the
20 ionomers are metacrylic acid based and neutralized with
21 metal salts forming ionic clusters.

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23 19. A method according to any of claims 9-15 wherein the
24 ionomers are sulfonic acid based and neutralized with metal
25 salts forming ionic clusters.

26

27 20. A method according to any of claims 9-15 wherein the
28 ionomers are phosphoric acid based and neutralized with
29 metal salts forming ionic clusters.

30

31 21. A method according to any of claims 9-15 wherein the
32 ionomers are ethylene based and neutralized with metal salts
33 forming ionic clusters.

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35 22. Liquid toner according to any of claims 1-8 wherein
36 the coating comprises less than 20 percent of the weight of
37 the particles.

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1 23. Liquid toner according to any of claims 1-8 wherein
2 the coating comprises less than 10 percent of the weight of
3 the particles.

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5 24. Liquid toner according to any of claims 1-8 wherein
6 the coating comprises less than 5 percent of the weight of
7 the particles.

8

9 25. Liquid toner according to any of claims 1-8 or 22-24
10 wherein the coating comprises a thickness effective in
11 improving the chargeability of the toner particles.

12

13 26. Liquid toner according to any of claims 1-8 or 22-25
14 wherein the coating comprises a thickness greater than or
15 equal to a monolayer of the ionomer.

16

17 27. Liquid toner according to claim 26 wherein the coating
18 comprises a thickness of greater than 0.02 micrometers.

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20 28. An electrostatic imaging process which comprises the
21 steps of:

22 forming a charged latent electrostatic image on a
23 photoconductive surface;

24 applying to the surface toner particles from a liquid
25 toner according to any of claims 1-8 or 22-27; and

26 transferring the resulting toner image to a substrate.

27

28 29. An electrostatic imaging process which comprises the
29 steps of:

30 forming a charged latent electrostatic image on a
31 photoconductive surface;

32 applying to the surface charged colorant particles
33 from a liquid toner prepared according to the method of any
34 one of claims 9-21; and

35 transferring the resulting toner image to a substrate.

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